



MINERALS CONTENT IN FOOD SUPPLEMENTS: LABEL DOSES SURVEY

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INTRODUCTION

- Food Supplements (FS) are widely consumed by the public, often without the advice of a health professional or follow-up by a nutritionist.
- Many of these FS have in their composition various minerals.
- Minerals are quintessential to maintain several biochemical and physiological functions in human body at low concentrations, but **excessive intake may lead to adverse/toxic effects**^{1,2}.

AIM

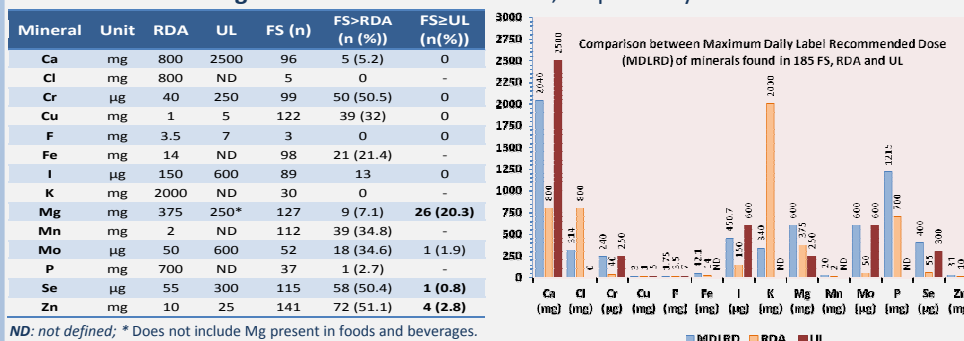
The aim of this study was to compare **total daily doses of minerals mentioned in FS labels** with the **Recommended Daily Allowances (RDA)** defined by European Union Directive³, and with the **Tolerable Upper Intake Levels (UL)**¹.

METHODOLOGY

- A total of **185 FS** sold in Portuguese pharmacies, supermarkets or health shops and on the internet were examined for indicated daily intake and dosage of **14 minerals (Ca, Cl, Cr, Cu, Fe, F, I, K, Mg, Mn, Mo, P, Se and Zn)**.
- **Selection criteria: oral solid** pharmaceutical forms for **adults, containing any of the 14 minerals**, as stated in the label, regardless of the purpose of its use.

RESULTS

- **Zn, Mg, Cu, Se, Mn, Cr, Fe** and **Ca** were present in **more than 50%** of the FS.
- Label daily doses of **Cr, Se** and **Zn** were **>RDA** in **more than 50%** of the cases and in more than **30%** of FS for **Mn, Mo** and **Cu**.
- **Mn** and **Mo** label doses were **10-12 folds higher than RDA** in some products, reaching the **UL** of **Mo**.
- Levels of **Se** and **Zn** greater than **UL** in **1** and **4** FS, respectively.



CONCLUSIONS

- Some FS labels presented doses of minerals far above the recommended RDA and UL.
- Considering the adverse/toxic effects they have (e.g. Zn changes copper balance; hemoglobin and blood profile and suppress immune response^{1,2}), it is pertinent to **review the daily doses present in FS** to assure the safety of these products.
- In order to safeguard the health of FS consumers, authors consider that **these products should be under the same quality control of drug products**.

REFERENCES: 1. EFSA - Tolerable Upper Intake Levels (2006). <http://www.efsa.europa.eu>; 2. Hathcock, J. (2013). Vitamin and Mineral Safety. Vitamin and Mineral Safety, 3rd. editi, 1–190; 3. Commission Directive 2008/100/EC

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